

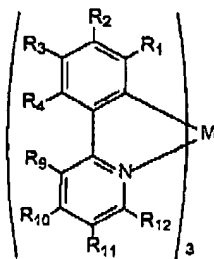
Appl. No. 10/829,011
 Amdt. Dated November 17, 2005
 Reply to Office Action of Aug. 18, 2005

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Previously presented) An organic light emitting device comprising an array of pixels defined by a photoresist grid and having a pixel pitch of less than 500 μm , wherein each pixel comprises an emissive layer comprising a phosphorescent emissive material of the formula VII



VII

wherein

M is a metal atom;

each R^1 , R^2 , R^3 , R^4 , R^9 , R^{10} , R^{11} , and R^{12} is, independently, H, F, Cl, Br, I, R, OR, $N(R)_2$, SR, C(O)R, C(O)OR, C(O)N(R) $_2$, CN, NO $_2$, SO $_2$, SOR, SO $_2$ R, SO $_3$ R; and additionally, or alternatively, any one or more of R^1 and R^2 , or R^2 and R^3 , or R^3 and R^4 , or R^9 and R^{10} , or R^{10} and R^{11} , or R^{11} and R^{12} , together form, independently, a fused 4- to 7-member cyclic group, wherein said cyclic group is cycloalkyl, cycloheteroalkyl, aryl, or heteroaryl, and wherein said cyclic group is optionally substituted by one or more substituents X;

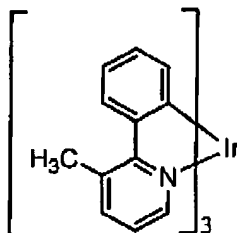
each R is, independently, H, C $_1$ -C $_{20}$ alkyl, C $_2$ -C $_{20}$ alkenyl, C $_2$ -C $_{20}$ alkynyl, C $_1$ -C $_{20}$ heteroalkyl, C $_5$ -C $_{40}$ aryl, C $_5$ -C $_{40}$ heteroaryl, aralkyl; wherein R is optionally substituted by one or more substituents X;

Appl. No. 10/829,011
 Amdt. Dated November 17, 2005
 Reply to Office Action of Aug. 18, 2005

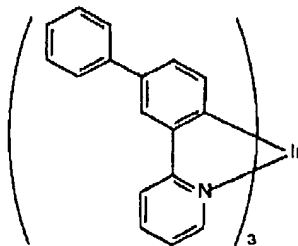
each X is, independently, H, F, Cl, Br, I, R', O R', N(R')₂, SR', C(O)R', C(O)OR', C(O)N(R')₂, CN, NO₂, SO₂, SOR', SO₂R', or SO₃R';

each R' is, independently, H, C₁-C₂₀ alkyl, C₁-C₂₀ perhaloalkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₅-C₄₀ aryl, or C₅-C₄₀ heteroaryl; and wherein at least one of R¹, R², R³, R⁴, R⁹, R¹⁰, R¹¹, and R¹² is not H.

6. (Original) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula



7. (Original) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula VII wherein at least one of R¹, R², R³, R⁴, R⁹, R¹⁰, R¹¹, and R¹² is aryl or heteroaryl.
8. (Original) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula



9. (Previously presented) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula VII wherein at least one

Appl. No. 10/829,011

Amdt. Dated November 17, 2005

Reply to Office Action of Aug. 18, 2005

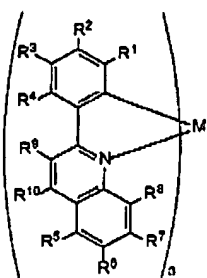
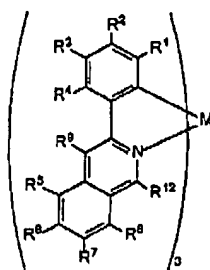
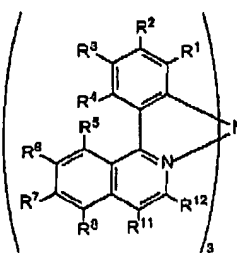
of R^1 and R^2 , or R^2 and R^3 , or R^3 and R^4 , or R^9 and R^{10} , or R^{10} and R^{11} , or R^{11} and R^{12} , together form, independently, a fused 5-or 6-member cyclic group.

10. (Original) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula VII wherein M is Ir.
11. (Previously presented) The organic light emitting device of claim 5, wherein the emissive layer comprises an emissive material of the formula VII wherein at least one of R^1 and R^2 , or R^2 and R^3 , or R^3 and R^4 , or R^9 and R^{10} , or R^{10} and R^{11} , or R^{11} and R^{12} , together form, independently, a fused 5-or 6-member cyclic group.
12. (Cancelled)
13. (Previously presented) The organic light emitting device of claim 5, wherein the grid comprises a negative photo-resist material.
14. (Previously presented) The organic light emitting device of claim 5, wherein the grid comprises a positive photo-resist material.
15. (Cancelled)
16. (Cancelled)
17. (Previously presented) The organic light emitting device of claim 5, wherein the emissive layer comprises a phosphorescent emissive material of the formula Ia, IIa, or IIIa.

Appl. No. 10/829,011

Amdt. Dated November 17, 2005

Reply to Office Action of Aug. 18, 2005

I_aII_aIII_a

wherein

M is a metal atom;

each R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹ and R¹² is, independently, H, F, Cl, Br, I, R, OR, N(R)₂, SR, C(O)R, C(O)OR, C(O)N(R)₂, CN, NO₂, SO₂, SOR, SO₂R, SO₃R; and additionally, or alternatively, any one or more of R¹ and R², or R² and R³, or R³ and R⁴, or R⁵ and R⁶, or R⁶ and R⁷, or R⁷ and R⁸, or R⁹ and R¹⁰, or R¹¹ and R¹², together form, independently, a fused 4- to 7-member cyclic group, wherein said cyclic group is cycloalkyl, cycloheteroalkyl, aryl, or heteroaryl, and wherein said cyclic group is optionally substituted by one or more substituents X;

each R is, independently, H, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₅-C₄₀ aryl, C₃-C₄₀ heteroaryl, aralkyl; wherein R is optionally substituted by one or more substituents X;

each X is, independently, H, F, Cl, Br, I, R', OR', N(R')₂, SR', C(O)R', C(O)OR', C(O)N(R')₂, CN, NO₂, SO₂, SOR', SO₂R', or SO₃R'; and

each R' is, independently, H, C₁-C₂₀ alkyl, C₁-C₂₀ perhaloalkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ heteroalkyl, C₅-C₄₀ aryl, or C₃-C₄₀ heteroaryl.

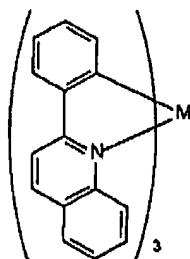
18. (Original) The organic light emitting device of claim 17, wherein the emissive layer comprises a phosphorescent emissive material of the formula I_a, II_a, or III_a wherein M is Ir.

Appl. No. 10/829,011

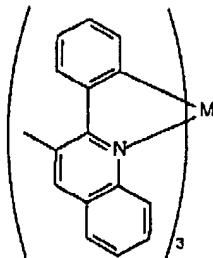
Amdt. Dated November 17, 2005

Reply to Office Action of Aug. 18, 2005

19. (Original) The organic light emitting device of claim 17, wherein the emissive layer comprises a phosphorescent emissive material of the formula I_a.
20. (Original) The organic light emitting device of claim 17, wherein the emissive layer comprises a phosphorescent emissive material of the formula II_a.
21. (Original) The organic light emitting device of claim 17, wherein the emissive layer comprises a phosphorescent emissive material of the formula III_a.
22. (Original) The organic light emitting device of claim 19, wherein the emissive layer comprises a phosphorescent emissive material of the formula



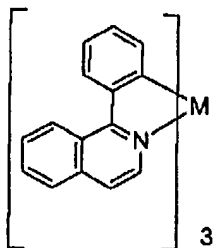
23. (Original) The organic light emitting device of claim 22, wherein M is Ir.
24. (Original) The organic light emitting device of claim 19, wherein the emissive layer comprises an emissive material of the formula



25. (Original) The organic light emitting device of claim 24, wherein M is Ir.

Appl. No. 10/829,011
Amdt. Dated November 17, 2005
Reply to Office Action of Aug. 18, 2005

26. (Original) The organic light emitting device of claim 21, wherein the emissive layer comprises an emissive material of the formula



27. (Original) The organic light emitting device of claim 26, wherein M is Ir.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

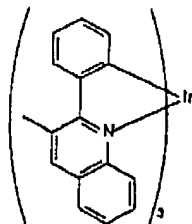
35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

39. (Previously presented) An organic light emitting device having an emissive layer, wherein the emissive layer comprises a phosphorescent emissive material of the formula I_c



I_c

Appl. No. 10/829,011
Amdt. Dated November 17, 2005
Reply to Office Action of Aug. 18, 2005

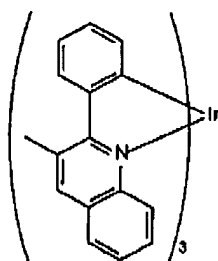
40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Previously presented) A compound having the formula I_c



I_c